

Application No. 10/675,264

IN THE CLAIMS:

Cancel claims 1-5 and 8-16.

6. The method of claim 5 17, wherein the ~~etching~~ gas consists essentially of O<sub>2</sub>.

7. The method of claim 5 17, wherein said metal-containing layer comprises Aluminum.

ADD the following new claims

17. A method of removing polymer residue from a semiconductor substrate or from surfaces of an etch chamber, which residue results from etching portions of a metal layer comprising aluminum or copper from the semiconductor substrate, the method comprising the steps of:

placing the substrate in the etch chamber;

etching the metal layer by providing an etchant gas in the chamber, the gas comprising Cl<sub>2</sub>, BCl<sub>3</sub> or CHF<sub>3</sub> or a mixture thereof, said etching resulting in formation of the polymer residue; and

providing a gas in the chamber, comprising O<sub>2</sub>, O, NO or NO<sub>2</sub> or a mixture thereof.

18. The method of claim 17 wherein the step of providing the gas comprising O<sub>2</sub>, O, NO or NO<sub>2</sub> in the chamber cleans the polymer residue from the substrate.

19. The method of claim 17 wherein the step of providing the gas comprising O<sub>2</sub>, O, NO or NO<sub>2</sub> in the chamber includes formation of an oxygen plasma to clean the polymer residue from the substrate.

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20. The method of claim 17 wherein the step of providing the gas comprising O<sub>2</sub>, O, NO or NO<sub>2</sub> in the chamber is performed as part of a dechucking operation.

21. The method of claim 17 wherein the step of providing a gas in the chamber is performed by providing a mixture comprising two or more species taken from the group comprising O<sub>2</sub>, O, NO and NO<sub>2</sub>.

22. The method of claim 17 wherein:  
the step of placing the substrate in the etch chamber includes placing the substrate in a chuck; and  
the step of providing the gas in the chamber includes dechucking the substrate with the gas taken from the group consisting of O<sub>2</sub>, O, NO and NO<sub>2</sub>.

23. A method of removing polymer residue from a semiconductor substrate or from surfaces of an etch chamber, which residue results from etching portions of a metal layer comprising aluminum or copper from the semiconductor substrate, the method comprising the steps of:

placing the substrate in the etch chamber;  
etching the metal layer with an energized form of Cl<sub>2</sub> or BCl<sub>3</sub> or a mixture thereof, said etching resulting in formation of the polymer residue;  
and  
providing a gas in the chamber, comprising O<sub>2</sub>, O, NO or NO<sub>2</sub> or a mixture thereof.